

Daniela Verthelyi, MD/PhD

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Education:

1988 MD; University of Buenos Aires, Argentina.

1996 PhD; Virginia-Maryland Regional College of Veterinary Medicine, Virginia
Tech, Virginia.

Other courses:

- 2004 Basic Drug law. CDER.
- 2004 Proteins and Peptides: Scientific Foundation for Reviewers.
- 2005 Antisense and oligonucleotides Therapeutic Symposium
- 2006 Glycomics and Sweet pharmaceuticals- Advances in glycobiology

Professional Appointments:

Lab Chief, 2008-present
Laboratory of Immunology,
Division of Therapeutic Proteins,
Office of Biotechnology products,
Center for Drug Research and Evaluation,
Food and Drug Administration,
Bethesda, MD.

Senior Investigator, Apr-Dec. 2007
Laboratory of Immunology,
Division of Therapeutic Proteins, OBP/CDER/FDA
Bethesda, MD.

Senior Staff Fellow 2002-2007
Laboratory of Immunology,
Division of Therapeutic Proteins, OBP/CDER/FDA
Bethesda, MD.

Senior Staff Fellow

1997-2002

Laboratory of Retroviral Immunology,
Division of Viral Products, CBER/ FDA
Bethesda, MD

Oak Ridge Fellow

1996-1997

Laboratory of Retroviral Immunology,
Division of Viral Products, CBER/ FDA;
Bethesda, MD.

General practitioner

1988-1989

Emergency Medicine,
Hospital Municipal de Pilar,
Buenos Aires, Argentina.

Research Fellow

1986-1989

Dept. de Obstetrics y Gynecology
Hospital Municipal Sarda,
Buenos Aires, Argentina.

Description of current duties:

- Principal investigator of a research program focused on the identification and characterization of modulators of the innate immune response as they relate to potential therapies for infection with agents of bioterrorism and emerging pathogens.
- Train and supervise 2 postdoctoral fellows, and a technician.
- Provide expert advice for policy and guidance development, as a member of the CDER/CBER Biotechnology CTWG group, CBER/CDER counter-bioterrorism research working group, anthrax immune products strategy working group, Interagency Coordinating Committee on the Validation of Alternative Methods, Committee for Advanced Scientific Education.
- Reviewer of multiple investigational new drug applications (INDs) and biologics license applications (BLAs) targeting infectious agents, cancer and autoimmune diseases. FDA-wide consult for product immunogenicity-associated adverse events

Grants and Awards (Selected, full list available upon request):

- **Assessment of the effects of product impurities that stimulate toll like receptors on product immunogenicity.** CDER's Regulatory Science and Review Enhancement program, February 2006.
- **Effect of sex hormones on the immune response to CpG ODN** Office of Women's Health Grant. March, 2002

- **Optimization of immunoprotective agents to Induce Protective Immunity against Biowarfare Pathogens.** Intramural Counter Bioterrorism Initiative. February, 2002.
- **CBER Special accomplishment award** “for designing CpG ODN that stimulate human T cells and developing assays to detect that stimulation”. 1998
- National Institute of Environmental Health Sciences. Travel Award, 1998.
- American Society for Reproductive Immunology. Travel Award. 1996
- Lupus Foundation of America. **Gina Finzi Memorial Fellowship** award. 1995.
- **Sigma Xi Research Fellowship Award.** 1995.
- Virginia Polytechnic Institute and State University. **Graduate Research Development Program Award.** 1994, 1995.
- Virginia-Maryland College of Veterinary Medicine, Dean's list, 1990-1994.
- University of Buenos Aires, **Competitive Research Fellowship.** 1985, 1986, 1987.

Professional Societies Memberships and Activities:

- American Association of Immunology; International Society for interferon and Cytokine Research
- NIH Cytokine Interest Group (Steering committee since 2002, Treasurer 2004-2007, Co- Chair 2006-2007, Chair 2007-2008).
 - Symposium on Cytokines in Innate Immunity, September 2002 (Organizer and Chair).
 - Symposium on Type I Interferons, April, 2005 (Organizer and Chair).
- FDA Counter Terrorism Research Working Group Seminar series. 2003-2005 (Co-Chair).
- Symposium on Medical Countermeasures and Innate Immunity: Critical Path to product discovery, development and medical use. Washington DC. October, 2005. (Organizer and co-chair)
- Integrative Neural Immune Program, Biodefense Workshop 2007. (Organizing Committee)
- Scientific Steering Committee for Bacterial Therapeutics at USAMRIID. Member, 2002-2004.
- CDER/CBER Biotechnology GTWG group. Member.
- Committee for Advanced Scientific Education. Member.
- The Interagency Coordinating Committee on the Validation of Alternative Methods. Consult.
- Ad hoc scientific reviewer for: Journal of Immunology, Trends in Immunology, Cellular Immunology, Journal of Leukocyte Biology, Cellular immunology, Life Sciences, Journal of Endotoxin Research, Endocrinology, Virology and Clinica Chimica Acta, Oligonucleotides, Biomacromolecules.
- AD hoc grant reviewer for study sections at NCI, NCCAM, NIST, USAMRIID, and FDA's Office of Women's Health.

Patents:

1. Verthelyi, D., Grajkowski, A., Beaucage, S.L. CpG Oligonucleotide Prodrugs, Compositions Thereof and Associated Therapeutic Methods. U.S. Provisional Patent Application 60/635,744 – 12/13/04. International Patent Application PCT/US2005/044935 – 12/13/05.
2. Method of preventing infections from bioterrorism agents with immunostimulatory CpG oligodeoxynucleotides. Application no. 60/422,964 filed on November 2002. Inventors: Dennis Klinman, Daniela Verthelyi and Bruce Ivins.
3. Method for rapid generation of mature dendritic cells. Inventors: Filed August 2001. Inventors: Mayda Gursel, Daniela Verthelyi and Dennis Klinman. E-214-01/0 filed Aug 14 2001. **Class:** 435372000 (USPTO), C12N005/08 (Intl Class)
4. Method of treating secondary infections in HIV-infected subjects with immunostimulatory CpG oligonucleotides. Filed September 2002. Inventors: Daniela Verthelyi and Dennis Klinman.
5. Suppressor CpG oligodinucleotides and methods of use. Filed September 24, 2001 and August 1, 2002: 131651. Inventors: Rainald Zeuner, Daniela Verthelyi and Dennis Klinman. Application # 60/324,484 and 60/400,826 **Class:** 514044000 (USPTO), A61K048/00 (Intl Class).
6. Oligodeoxynucleotides and their use to induce an immune response. Filed on April 12, 1999, under the Serial number 60/128,898. Inventors: Dennis Klinman, Daniela Verthelyi, and Ken Ishii.

Bibliography:

Peer-reviewed primary research publications

1. S. Ansar Ahmed and D. Verthelyi. Antibodies to cardiolipin in normal C57BL/6J mice: Induction by estrogen but not by dihydrotestosterone. (1993) *J. Autoimmunity* 6, 265-279.
2. S. Ansar Ahmed, J. Boone and D. Verthelyi. Anticardiolipin antibodies in autoimmune-prone BXSB and MRL/lpr mice, and estrogen-treated normal C57BL/6J mice cross react with other phospholipids. (1993). *Int. J. Immunopathol. Pharmacol.* 6: 135-147.
3. D. Verthelyi and S. Ansar Ahmed. 17 β -estradiol but not 5 α -dihydrotestosterone augment antibodies to double stranded deoxyribonucleic acid in non-autoimmune C57BL/6J mice. (1994). *Endocrinology* 135: 2615-2622.

4. **D. Verthelyi** and S. Ansar Ahmed. Characterization of estrogen-induced antibodies to cardiolipin in normal mice. (1997) *J. Autoimmunity*. 10:115-125.
5. **D. Verthelyi**, N. Dybdal, K. Elias, and D. Klinman. DNase treatment delays anti-DNA autoantibody production but does not improve survival of lupus prone (NZB x NZW)F₁ Mice. (1998). *Lupus* 7:223-230.
6. **D. Verthelyi** and S. Ansar Ahmed. Estrogen increases the number of plasma cells and enhances their autoantibody production in nonautoimmune C57BL/6 mice. (1998). *Cell Immunol.* 189(2):125-34.
7. K.J. Ishii, W.R. Weiss, M. Ichino, **D. Verthelyi** and D.M. Klinman. Activity and safety of DNA plasmids encoding IL-4 and IFN gamma. (1999) *Gene Therapy*. 6: 237-244.
8. J.C. Davis, S. Manzi, C. Yarboro, J.Rairie, I. McInness, **D. Verthelyi**, D. Sinicropi, V.G. Hale, H. Austin, D.T. Boumpas, J.H. Klippel. Recombinant human DNase I in the treatment of lupus nephritis. (1999). *Lupus* 8 (1): 68 - 76.
9. **D. Verthelyi** and D.M. Klinman. Sex hormone levels correlate with the activity of cytokine secreting cells in vivo. (2000) *Immunology* 10: 384-390.
10. **D. Verthelyi**, M. Petri, M. Ylamus, D.Klinman. Disassociation of sex hormone levels and cytokine production in SLE patients. (2001). *Lupus*. 10:352-358.
11. **D. Verthelyi**, K.J. Ishii, M. Gursel, F. Takeshita and D.M.Klinman. Human peripheral blood cells differentially recognize and respond to two distinct CpG motifs. (2001). *J.Immunol.* 166: 2372.
12. S. Kamstrup, **D. Verthelyi** and D. Klinman. Response of porcine monocytes to CpG-containing oligodeoxynucleotides. (2001) *Vet. Microbiol.* 78:353-362.
13. **D. Verthelyi**, R. T. Kenney, R.A. Seder, and D. Klinman. CpG Oligodeoxynucleotides as vaccine adjuvants in Primates. (2002). *J.Immunol.* 168(4): 1659-1663.
14. M. Gursel, **D. Verthelyi**, I. Gursel, K. Ishii, and D. M. Klinman. Differential and competitive activation of human immune cells by distinct classes of CpG oligodeoxynucleotide. (2002). *J Leukoc Biol.* 71(5):813-20.

15. R.A. Zeuner, D.M. Klinman, K. Ishii and **D. Verthelyi**. Prevention of inflammatory arthritis by "Suppressive" Oligodeoxynucleotides. (2002). *Arthritis Rheum.* 46:2219-2224.
16. M. Gursel, **D. Verthelyi** and D.M. Klinman. CpG oligodeoxynucleotides induce human monocytes to mature functional dendritic cells. (2002). *European Journal of Immunol.* 32: 2617-2622.
17. R. A. Zeuner, D. M. Klinman, G. Illei, C. Yarbboro, K. J. Ishii, M.Gursel, **D. Verthelyi**. Response of PBMC from Lupus Patients to Stimulation by CpG Oligodeoxynucleotides. (2003). *Rheumatology* 42(4):563-569.
18. C. A. Leifer, **D. Verthelyi**, D.M. Klinman. Heterogeneity in the Human Response to Immunostimulatory CpG Oligodeoxynucleotides. (2003) *Journal of Immunotherapy* 26(4) 313-319
19. **D. Verthelyi**, M. Gursel, R. Kenney, J. Lifson, S. Liu, J. Mican, and D. M. Klinman. CpG Oligodeoxynucleotides Protect Normal and SIV-Infected Macaques From Opportunistic Infection. (2003). *J. Immunol.* 170:4717-4723.
20. R. A. Zeuner, **D. Verthelyi**, M. Gursel, K.J. Ishii and D.M. Klinman. Influence of stimulatory and suppressive DNA motifs on host susceptibility to inflammatory arthritis. (2003). *Arthritis and Rheum.* 48(6): 1701-1707.
21. S. Mendez, K. Tabbara, Y. Belkaid, S. Bertholet, **D. Verthelyi**, D. Klinman, R. A. Seder and D. L. Sacks. Live vaccination against cutaneous leishmaniasis attenuated by co-injection of CpG-ODN. (2003) *Infection and Immunity* 71(9):5121-5129.
22. **D. Verthelyi**, V. W. Wang, J. D. Lifson and D. M. Klinman. CpG oligodeoxynucleotides improve the response to hepatitis B immunization in healthy and SIV infected rhesus macaques. (2004). *AIDS* 30; 18(7):1003-1008.
23. B. Flynn, V. Wang, D. L. Sacks, R. A. Seder and **D. Verthelyi**. Prevention and treatment of cutaneous leishmaniasis in primates using type D CpG ODN. (2005). *Infection and Immunity.* 73(8):4948-4954.
24. A. Grajkowski*, J. Pedras-Vasconcelos*, V.W. Wang, C. Ausín, S. Hess, **D. Verthelyi**, and S. L. Beaucage. Thermolytic CpG-containing DNA oligonucleotides as potential immunotherapeutic prodrugs. (2005). *Nucleic Acid Research.* 21; 33(11): 3550-3560.

25. J. Pedras-Vasconcelos, D. Goucher, L. Tonelli, V. W. Wang, S. Ito, and **D. Verthelyi**. CpG ODN protect newborn mice from a lethal challenge with the neurotropic Tacaribe arenavirus. (2006) *J. Immunol.* 176:4940-4949.
26. M. Puig, A. Grajkowski, M. Boczkowska, C. Ausin, S. L. Beaucage, and **D. Verthelyi**. Use of thermolytic formyl protective groups to prevent G-tetrad formation in CpG ODN type D: structural studies and immunomodulatory activity in primates. (2006). *Nucleic Acid Research*.34 (22):6488-6495.
27. E.D. Ponomarev, E.J. Kerschen, L.P. Shriver, S.H. Burnett, J. Pedras-Vasconcelos, **D Verthelyi**, A.M. Kaplan, D.A. Cohen and B.N. Dittel. GM-CSF Production by Autoreactive T Cells is Required for the Activation of Microglial Cells and the Onset of Experimental Autoimmune Encephalomyelitis. (2007) *J. Immunol.* 178 (1):39048.
28. N. Katsenelson, S. Kanswal, M. Puig, **D. Verthelyi**, and M. Akkoyunlu. Synthetic CpG deoxyoligonucleotides upregulate the expression of BAFF receptors on B lymphocytes and augment BAFF and APRIL mediated immunoglobulin secretion. (2007). *European Journal of Immunology*. 37(7):1785-95.
29. C. Sauder, J Pedras-vasconcelos, M. Puig and **D. Verthelyi**. The IP10 (CXCL10) specific cDNA probe of the mCK-5c multiprobe RNase protection assay kit carries two nucleotide insertions that complicate the interpretation of results. (2008). *Cytokine in press*.
30. J. A. Pedras-Vasconcelos, M. Puig, C. Sauder, C.Wolbert, M. Ovanesov, D. Goucher and **D.Verthelyi**. Anti-TNF α therapy rescues neonatal mice from lethal Arenavirus -induced meningoencephalitis. *J.Immunol.* *Submitted*.

Review articles and book chapters:

1. **D. Verthelyi** and Klinman D.M. Impact of the type 1: type 2 cytosine imbalance on disease activity in SLE. In: *Lupus-Cellular and Molecular Pathogenesis*. Eds: Kammer GM and Tsokos GC, Humana Press, Totowa NJ. pp361-370.
2. D.M. Klinman, K.J. Ishii, **D. Verthelyi**. CpG DNA augments the immunogenicity of plasmid DNA vaccines. (1999) *Current Topics Micro. Immunol.* 247:131-142.
3. D.M. Klinman, **D. Verthelyi**, F. Takeshita and K.J. Ishii. Immune Recognition of Foreign DNA: A Cure for Bioterrorism? (1999). *Immunity*. 11:11-12.
4. S. Ansar Ahmed, B.D.Hissong, **D. Verthelyi**, K. Donner, K. Becker, E. Karpuzoglu-Sahin. Gender and Risk of Autoimmune Diseases: Possible

- Role of Estrogenic Compounds. (1999). *Environ. Health Perspect.* 107(Suppl 5):681-686.
5. D.M. Klinman, S. Kamstrup, **D. Verthelyi**, I. Gursel, K.J. Ishii, F. Takeshita and M. Gursel. Activation of the innate immune system by CpG oligodeoxynucleotides: applications and safety issues. (2000). *Springer Seminars in Immunopathology*. 22: 173-183.
 6. **D. Verthelyi**. Sex hormones as immunomodulators in health and disease. (2001). *International Immunopharmacology* 1 (6): 983-993.
 7. D.M. Klinman, F. Takeshita, I. Gursel, C.A. Leifer, K.J. Ishii, **D. Verthelyi** and M. Gursel. CpG DNA: recognition by activation of monocytes. (2002) *Microbes and Infection* 4(9):897-901.
 8. **D. Verthelyi** and D.M. Klinman. CpG ODN: Safety considerations. In: Microbial DNA and Immune Modulation. E.Raz, Ed. *Humana Press*, CA. p385-396 (2002).
 9. **D. Verthelyi** and D.M. Klinman. Immunoregulatory activity of CpG oligonucleotides in humans and non-human primates. (2003). *Clinical Immunology* 109 (1): 64-71.
 10. **D. Verthelyi**. Sex hormones and the immune system. In: Encyclopedia of Hormones. H.L. Henry and A.W. Norman, Eds. Academic Press. (2003).
 11. **D. Verthelyi** and R.A. Zeuner. CpG DNA signaling in dendritic cells and B cells: Not just TLR9. (2003). *Trends in Immunology* 24 (10):519-522.
 12. D.M. Klinman, D. Currie, I. Gursel, **D. Verthelyi**. Use of CpG oligodeoxynucleotides as immune adjuvants. (2004). *Immunol Rev.* 199:201-16.
 13. A. Grajkowski, J. Pedras-Vasconcelos, C. Ausín, **D. Verthelyi**, and S.L. Beaucage. Design and development of thermolytic DNA oligonucleotide prodrugs. 2005. *New York Academy of Science*. 1058:26-39.
 14. **D. Verthelyi**. Adjuvant properties of CpG oligonucleotides in primates. 2006. In: DNA Vaccines. Mark Saltzman, ed. *Methods Molec. Med.* 127:139-158.
 15. **D. Verthelyi**. Female's heightened immune status: Estrogen, T cells and iNOS in the balance. 2006. *Endocrinology*. 147:659-661.
 16. J. Wang, J. Lozier, G. Johnson, S. Kirshner, **D. Verthelyi**, A. Pariser, E. Shores, and A. Rosenberg. Neutralizing Antibodies to Therapeutic Enzymes: Prediction, Prevention, and Treatment. *Submitted*.

17. D. Verthelyi and Montserrat Puig. Structure/function of IFN α -inducing CpG ODN. *In press.*

Selected scientific presentations at national and international meetings:

1. FDA perspective on pre-screening protein therapeutics. Immunogenicity for Biotherapeutics. McLean, Virginia, May, 2008. Invited speaker.
2. Re-tooling innate and inflammatory responses to treat viral encephalitis. Blood Research Institute. Milwaukee, Wisconsin. April 2008. Invited seminar.
3. Oligonucleotides for Infectious Diseases, an Overview. Oligonucleotide-based therapeutics. DIA/FDA/Health Canada/OTS. Bethesda, April 19-20, 2007. Invited Speaker and Session Chair.
4. TLR9: Targeting the immune system for immunoprotection. Boston University Medical School. September, 2006.
5. Thermolytic oligodeoxynucleotides: a new target for TLR-9. Recent Advances in pattern recognition-Toll 2006. Salvador, Brazil. March, 2006.
6. TLR9 agonists in immunoprotection and vaccine development. National Academy of Medicine, Argentina. March 2006.
7. Meningoencephalitis in Tacaribe-infected Mice: The Role of the Immune Response*. DVP Seminar Series, CBER, FDA. Lecture. January, 2006.
8. Toll Receptors and immunoprotection. Medical Countermeasures and Innate Immunity: Critical Path to Product Discovery, Development and Medical Use. Fort McNair, Washington DC. December 8, 2005. Chair and Speaker.
9. TLR-9: Targeting the innate immune system for immunoprotection. NIH Research Festival. Lecture. October, 2005.
10. Targeting DC for immunoprotection and vaccine development: A new generation of CpG ODN type D. 2nd International Conference
11. Dendritic Cells at the Host-Pathogen Interface. Warrenton, Virginia. September 2005.
12. Immune Targeting using Toll Like Receptor (TLR) Agonists. CDER Scientific Rounds. June 2005. Rockville, Maryland. Lecture.
13. CpG protects neonatal mice against a lethal New World Arenavirus Infection. Keystone Symposia: Innate immunity to pathogens. January, 2005. Seaboard, CO.
14. Art and science behind immunogenicity testing: The FDA perspective. Speaker. 17th Annual DIA EuroMeeting - Medicines in Changing Times. March, 2005. Lisbon, Portugal. Invited speaker.
15. Distinct immunoprotective and adjuvant effect of TLR ligands in primates. Keystone Symposia: Innate immunity to pathogens. January, 2005. Seaboard, CO.
16. Targeting the innate immune system for immunoprotection: The primate experience. DTP seminar series. October, 2005. Lecture.
17. Thinking about immunogenicity: from Toll receptors to decision making. Barnett's International 3rd Annual meeting on Immunogenicity Testing For Therapeutics. Philadelphia, PA. September 2005. Invited speaker.
18. Immune Targeting using Toll Like Receptor (TLR) Agonists. CDER Scientific

Rounds. June 2005. Rockville, Maryland. Lecture.

19. Selective application of CpG ODN as vaccine adjuvants and immunoprotective agents in healthy and immunocompromised primates. Seminar. CBER Parasitology Interest Group. Lecture. April, 2004.
20. CpG ODN protects newborn mice against lethal infection with Tacaribe, a prototypic New World arenavirus. FDA Science Forum 2004.
21. Safety and efficacy of CpG ODN as vaccine adjuvants and immunoprotective agents in healthy and immunocompromised subjects. FDA Science Forum 2004.
22. CpG ODN as vaccine adjuvants and immunoprotective agents in healthy and immunocompromised SIV-infected primates. FASEB, Washington DC. April, 2004.
23. CpG-induced protection in newborn mice against a lethal New World Arena virus infection. FASEB, Washington DC. April, 2004.
24. Gender and sex hormones in response to immunostimulatory CpG Oligodeoxynucleotides. Speaker. American Society of Reproductive Immunology. Yale, New Haven, CT Lecture. June, 2003.
25. CpG ODN act as vaccine adjuvants and immunoprotective agents in healthy and immunocompromised primates. Workshop. Keystone Conference: Linking Innate and Adaptive Immunity. Taos, NM, January, 2003.
26. Immunoprotection using CpG ODN in healthy and immunocompromised primates. *Speaker*. Minisymposium on Cytokines and Innate Immunity. Frederick, MD. September 26, 2002.
27. CpG oligodeoxynucleotides indirectly stimulate the maturation of human monocytes into functional dendritic cells. Dendritic Cells At The Host Pathogen Interface. Warrenton, VA may 4-7, 2002.
28. CpG oligodeoxynucleotide induced tumor lysis in short term transitional cell carcinoma cultures: a pilot study. 49th Annual James C. Kimbrough Urological Seminar. July 2002.
29. Two distinct CpG DNA Sequences Differentially Stimulate an Innate Immune Response by Human PBMCs. 2001 FDA science forum Washington, DC February 15-16, 2001.
30. Novel CpG oligonucleotides act as vaccine adjuvants in primates. *Speaker*. 2nd International Symposium "Activating Immunity with CpG Oligos. Florida. October, 2001.
31. Two distinct CpG DNA Sequences Differentially Stimulate the Human Innate Immune System. FDA Forum on Regulatory Sciences. Washington DC. February, 2001.
32. Characterization of distinct CpG DNA sequences that stimulate the human immune system. Keystone symposia: Interface between innate and adaptive immunity. Keystone, January, 2001.
33. Characterization of distinct types of immunostimulatory CpG DNA motifs. Seminar. USDA. Beltsville, MD. April, 2000.
34. Regulation of Immunity and Autoimmunity. Keystone, January, 2001
35. Potential contributions of CpG oligonucleotides to autoimmunity. Cytokines in Tolerance, Autoimmunity and Inflammation. *Speaker*. Bethesda MD, January,

2000.

36. Characterization of DNA motifs that are immunostimulatory for human PBMC. Speaker. Millennium Conference on Nucleic Acid Therapeutics. Clearwater FL. January 2000.
37. Assessing ex-vivo antibody and cytokine secretion using ELISpot. Seminar. Eye Institute. N.I.H April 22, 1999.
38. Relative potency of immunostimulatory DNA motifs in humans. Keystone symposia: DNA Vaccines: Immune Responses, mechanisms and manipulating antigen processing. Snowbird, Utah. April, 1999.
39. Cytokine abnormalities in systemic lupus erythematosus: Do sex hormones play a role? Linking environmental agents to autoimmune diseases. National Institute of Environmental Health Sciences (NIEHS). September 1-3, 1998.
40. Evaluation of DNase treatment in murine lupus. Workshop. 1997 FDA Forum on Regulatory Sciences. Washington DC, December 1997.
41. Contribution of sex hormones to cytokine abnormalities characteristic of SLE. FASEB Summer Research Conference on Autoimmunity. Saxton River, VT. June, 1997.
42. DNase treatment of DNA-anti-DNA immune complexes in SLE. Rheumatoid Arthritis: Experimental therapies. Orlando, October, 1996.
43. Estrogen alters B cell functions and apoptosis. Sixth annual meeting, American Society for Reproductive Immunology. Knoxville TN. June, 1996.
44. Estrogen induces autoimmunity in non-autoimmune C57BL/6J mice. Ninth International Congress of Immunology. San Francisco. July 23-29, 1995.
45. Estrogen induces anti-cardiolipin antibodies in normal C57BL/6J mice. Sixth International Symposium on anti-phospholipid antibodies. Leuven, Belgium. 14-17 September, 1994.